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B.O.O.



STORAGE



NOTES FOR OBSERVATIONS

OF

INJURIOUS INSECTS.



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NOTES FOR OBSERVERS.

A series of observations in relation to insect ravages on the crops used as food is much to be desired, not only for scientific purposes, but also with a view to diminish the yearly losses to the country. Of these losses, telling heavily year by year both on the individual growers and the country at large, many would be remediable by more attention being directed to the subject; many would probably be found to be so if reliable information could be procured, as to the circumstances affecting or coinciding with them, and it is with this object that the assistance of their observations is now begged from Agriculturists and Entomologists, who practically and scientifically are both interested and can aid much in the matter. the information obtained to be condensed and forwarded to the observers in a printed Report.

The points chiefly to be noted are the *presence of surroundings*, such as plants, or shelter, suitable for the food or protection of the noxious insects; *agricultural conditions*, such as the drainage, the nature of the soil, and manures, and that of the preceding crop on the ground, its degree of cleanness and that of the neighbouring fields, and also the *state of the weather*.

It is observable that wet is injurious (generally speaking) to insects, and drought, when not too prolonged, is favourable. How far these various conditions affect the amount of insect appearance is one of the objects sought to be ascertained by the observations proposed.

The observations on the insects under the head of "general remarks" should give the *date* of their appearance as larvæ; *numbers*, comparatively, to previous years; and also date, and quantity of appearance, and date of disappearance in the perfect state, with *amount of injury* to crop.

These various entries, though looking formidable in description, would take but a short time to enter on the columned sheet, and would frequently be merely the observation of an ordinarily attentive naturalist in his daily walks, whilst the information they would give would be of solid value. Of course any additions to the list

of objects, or additional information beyond the points noted, would add to the value of the return. It is particularly requested that observers will use the number and name given in the list in making their records, and will be good enough, in all the observations, to use the scientific name of the insect, the use of local ones making many of the returns of former years nearly valueless for scientific purposes.

Any requisite information will be furnished on application to the Rev. T. A. PRESTON, The Green, Marlborough, Wilts; or E. A. FITCH, Esq., Maldon, Essex; to whom it is requested the first specimen of each insect may be sent for verification, if not known with certainty.

The insects selected for observation are—

1. **Haltica nemorum.** Turnip Flea Beetle. Length about $\frac{1}{16}$ inch; blackish, with broad yellow stripe down each wing-case. Feeds on young Turnip-leaves; noticeable by its flea-like jumps, and is generally known as "The Fly."

2. **Anthomyia ceparum.** Onion Fly. Larvæ, whitish and footless; feed in the bulb of the Onion.



PSILA ROSÆ.

3. **Psila Rosæ.** Carrot Fly, commonly known in its effects as "Rust." Larvæ, ochreous in colour, small, and footless; pierce the roots of Carrots and Parsnips, causing rust-coloured stains.



MAMESTRA BRASSICÆ.

4. **Mamestra Brassicæ.** Cabbage Moth. Caterpillars about $1\frac{1}{4}$ inch in length; greenish, or flesh-coloured, with a black tinge

along the back and an oblique line on the back on every segment. Feed on many green crops, especially piercing into the hearts of close-headed Cabbage. Moth with upper wings greyish brown, variously streaked with black, slightly with white. Under wings brown, shading at the base to dirty white.



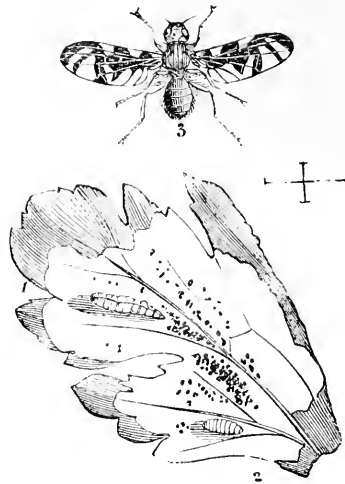
PIERIS BRASSICÆ.

5. **Pieris Brassicæ.** Large White Butterfly. Caterpillars green, or bluish striped with yellow, and dotted with black. Feed on expanded Cabbage-leaves. Butterfly white, with black tips to the wings. The fore wings with two black spots above in the female, and beneath in both sexes.



AGRIOTES OBSCURUS.

6. **Agriotes (obscurus or other species).** Wireworm. Larvæ long and narrow, like a piece of flattened wire; yellow and polished or leathery. Feeds for several years in the ground on young corn, and most cultivated crops. Distinguishable from other grubs bearing the name by having three pairs of legs. Beetle about $\frac{1}{3}$ inch in length, narrow, regains its position when laid on its back with a spring, accompanied by a sharp click.



TEPHRITIS ONOPORDINIS.

7. *Tephritis Onopordinis*. Celery and Parsnip Fly. Larvæ whitish and footless. Burrows between the two sides of the leaf so as to form large blisters.



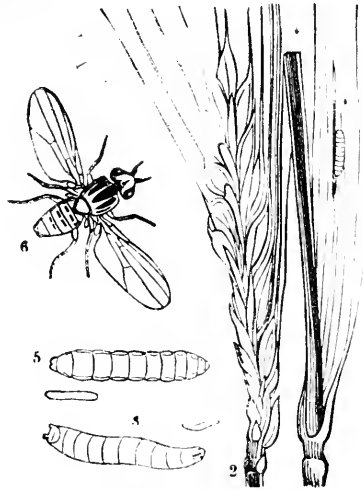
ATHALIA SPINARUM.

8. *Athalia spinarum*. Turnip Sawfly. Fly four-winged, with orange and black body. Larvæ various shades of grey and black. Commonly known as the Turnip Nigger or "Black Jack." Feeds on Turnip-leaves, and is at times excessively destructive.

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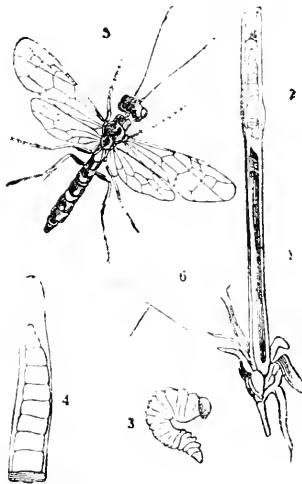
Observations of any other insects would also be desirable, especially of the grubs of *Agrotis segetum* (the Turnip Moth) and allied species known as surface caterpillars, and of those whose names are given, noticeable either for their hurtfulness to the

food crops, or special circumstances of weather frequently being coincident with their appearance.



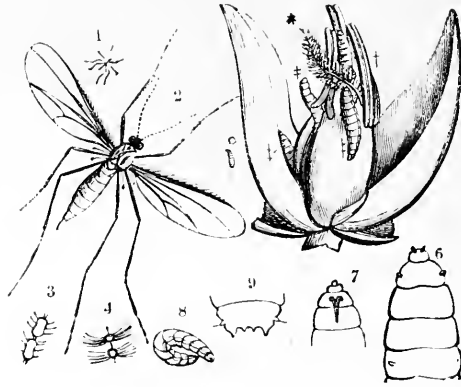
CHLOROPS TÆNIOPUS.

9. **Chlorops tæniopus.** Small grub causing a channel on the upper part of Corn-stems and abortion of the ear.



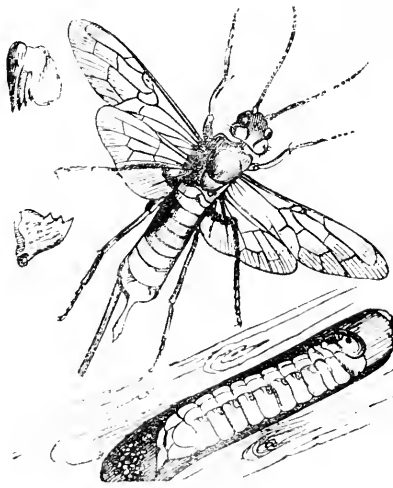
CEPHUS PYGMAEUS.

10. **Cephus pygmæus.** Small grub inside Corn-stalks, gnawing them nearly through at the ground level in autumn.



CECIDOMYIA TRITICI.

11. **Cecidomyia Tritici.** Minute orange grub, occurring in some numbers in flowers and chaff of wheat, and commonly known as "red maggot." Very destructive, especially in white wheats.



SIREX GIGAS.

12. **Sirex gigas.** Four-winged Fly, about an inch and a half long, colours black and yellow. Larva lives in fir timber.

13. **Asilus Crabroniformis.** Black and orange hairy two-winged Fly, about half an inch long. To be found in cattle-pastures in hot weather.



COLIAS EDUSA.

14. **Colias Edusa.** Butterfly with orange wings, banded at the edges with black. Caterpillar feeds on Leguminous plants.



ABRAXAS GROSSULARIATA.

15. **Abraxas grossulariata.** Currant or Magpie Moth. Moth white, blotched with black and yellow. Caterpillar cream-colour, spotted with black, and with orange spots down the side.

16. **Neuroterus lenticularis.** Oak-spangle Cynips, causing the small reddish disks, sometimes found in great numbers, on the back of Oak-leaves.

Most of the illustrations, by the kind permission of Dr. Maxwell T. Masters, are taken from the figures given by the late Mr. Curtis, accompanying his papers on Farm Insects in the 'Gardener's Chronicle.'





